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LAKE CARRIERS' ASSOCIATION.

To consider and take action upon all general questions relating to the navigation and carrying business of the Great Lakes, maintain necessary shipping offices and in general to protect the common interest of Lake Carriers, and improve the character of the service rendered to the public.

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HOW TO PROVE THE EARTH'S MOTION.

Anyone can prove the rotary motion of the earth on its axis by a simple experiment, for making which an educational journal of Frankfort, Germany, gives the following directions:

Take a good sized bowl, fill it nearly full of water and place it upon the floor of a room which is not exposed to shaking or jarring from the street. Sprinkle over the surface of the water a coating of lycopodium powder, a white substance which is sometimes used for the purposes of the toilet and which can be obtained at almost any apothecary's. Then, upon the surface of the coating of powder, make, with powdered charcoal, a straight black line, say an inch or two inches in length. Having made this little black mark with the charcoal powder on the surface of the contents of the bowl, lay down upon the floor, close to the bowl, a stick or some other straight object, so that it shall be exactly parallel with the mark. If the line happens to be parallel with a crack in the floor, or with any stationary object in the room, this will serve as well.

Leave the bowl undisturbed for a few hours, then observe the position of the black mark with reference to the object that it was parallel with. It will be found to have moved about and from east to west, that is to say, in a direction opposite to that of the earth on its axis.

The earth, in simply revolving, has carried the water and everything else in the bowl around with it, but the powder on the surface has been left behind a little. The line will always be found to have moved from east to west, which is perfectly good proof that everything else has moved the other way.

LIGHT KEEPERS APPOINTED.

The secretary of the treasury has appointed Michael M. Cooney keeper of Thunder Bay Island light station Henry Metiber, keeper at Bois Blanc, vice Lorenzo O. Holden, deceased; Thomas, Gallagher, second assistant keeper at Spectacle Reef, and John Sinclair, keeper at Cheboygan River range, vice Irvey Littlefield, deceased.

COAL CONSUMPTION AND HIGH SPEED IN VESSELS.

The official report of the trial of the U. S. cruiser Minneapolis gives figures of the trials made with one, two and three screws. Each trial lasted eight hours, the speed throughout being a little under 10 knots. With one screw it was 9.73 knots, with 1,920 indicated horse-power, and a consumption of 4630 pounds of coal per hour; with two screws the speed was 9.71 knots, the indicated horse-power was 2,017, with a consumption of 4,773 pounds of coal per hour. The third trial, with all the three screws, was made at a speed of 11.6 knots; the indicated horse-power was 2,491, and the hourly coal consumption 6,411 pounds. An interesting point which this trial shows is that while it took something more than 2,500 indicated horse-power to obtain 11.6 knots, it took more than eight times this power to give the ship a speed of 23.07 knots, showing thereby the great economy effected in low speed running.

NOTICE TO MARINERS.

UNITED STATES OF AMERICA—NORTHERN LAKES AND RIVERS—MICHIGAN.

CHURCHVILLE POINT LIGHT.—Notice is hereby given that, on or about October 1, 1894, a fixed white light, with two fixed red sectors, will be established on Churchville Point, the east point of Sugar Island, St. Marys River, Michigan.

The light will be shown, at a height of 30 feet above the water, from a lense lantern on a post rising from the center of a square lamp house; the post will be natural color and the house white.

The southerly red sector will cover the black spar buoy, No. 49, off Church Point Crib, and mark the turning point to and from the channel between squirrel Island and Church Point.

The northerly red sector will cut the southerly red sector of Manhattan Shoal Light and mark the turn of channel midway in the bend. The white arc between the southerly and northerly red sectors is about 198°.

By order of the Light-House Board:

JAMES A. GREER,
Rear Admiral U. S. Navy, Chairman.

Office of the Light-House Board, Washington, D. C., September 20, 1894.

LUMBER SHIPMENTS.

There have been a number of new features in the lake lumber traffic this year, one of the most important of which is the direct shipment on certain grades of lumber for export in large quantity. There has been exported from Duluth direct to Brazil and the West Indies over 20,000,000 feet, and the lumbermen, learning the demands of the trade, are in expectation of increasing it very largely, and in the future making it a most important branch of their business. Quite a shipment of deals and square timbers has been exported direct to Liverpool, chiefly from Ashland, Wis. No hardwood lumber has ever gone from Minnesota forests to the eastern trade. This season, however, a number of sales have been made, one for 1,000,000 feet, and the hardwood trade is likely to be of the utmost importance. There is a slight beginning of what is destined to be a magnificent transcontinental traffic so soon as the dearth of white pine becomes more pronounced. The Oregon Cedar and fir, the sugar pine and the California redwood are the legitimate successors of the white pine of to-day, whose growing scarceness is shown by the increase of the more distant sources of supply. This west coast timber is already being landed at docks at the head of Lake Superior for eastern shipment, and the business will grow as the eastern forests become denuded.

SUN SPOTS.

As confirming the theory of a distinct connection between sun spots and drought, M. Savelief, a European scientist, has carefully studied the variations of the sun's heat received by the soil of the earth at different stages of solar disturbance since 1890. The result of his elaborate researches shows that in all probability the calorific intensity of the sun's radiation increases directly as the spots and other solar disturbances increase.

It is noteworthy that with the culmination of the sun spot maximum epoch this year the temperatures registered in the interior of North America have been exceptionally high. Maximum shade temperatures in the region between the Alleghenies and the Rocky Mountains have repeatedly exceeded 100 degrees Fahrenheit, and in some instances the mercury in the shade has gone up to 106 and 108 degrees in our central valleys. Such heat could not possibly occur unless the atmosphere was unusually deficient in watery vapor. And hence the notable records made by this summer's "hot waves" in almost all sections of the United States reveal a most remarkable, if not unprecedented, state of aridity and drought.

DULUTH HARBOR IMPROVEMENTS.

The board of United States Army engineers will be asked to recommend an expenditure of $2,500,000 for the improvement of Duluth and Superior harbor, giving them twenty feet of water. It is asked that the Duluth entry be widened from 50 feet to 325 feet, and stone piers with a flaring mouth constructed. It is also asked that all harbor channels be made 400 feet wide and twenty feet deep.

NEWS AROUND THE LAKES.

CHICAGO, ILL.

Special Correspondence to The Marine Record.

Capt. A. L. Fitch returned on Tuesday from a business trip to Duluth.

Palmer, Cook & Calbick chartered the steamer I. J. Boyce and schooners J. L. Boyce and George L. Boyce for corn to Port Huron at 1⅛ cents.

J. J. Rardon & Co. chartered the steamer Arizona for corn to Buffalo at 1¼ cents, barge Plymouth for oats to Buffalo at 1⅛ cents, barge Scotia for wheat to Buffalo at 1⅜ cents.

P. H. Flemming & Co. chartered the steamer Schoolcraft for 50,000 bushels of clipped oats to Buffalo at 1¼ cents, the barge Nestor for 65,000 bushels of barley to Buffalo at 1¼ cents.

J. G. Keith & Co. received a telegram Tuesday morning from the captain of the life-saving station at St. Joseph, Mich., stating that the Charlemagne Tower, Jr., had passed there with the Wadena in tow.

C. W. Elphicke & Co. chartered the schooner John Kelderhouse for 35,000 bushels of wheat and the steamer J. J. Hill for 40,000 bushels of wheat, both for Milwaukee, at ¾ of a cent free of handling and shortage.

J. G. Keith & Co. chartered the steamer Mary McGregor for corn to Walkerville at 1½ cents, the steamer Iron King for corn to Buffalo at 1⅜ cents, barge Iron Queen for wheat to Buffalo at 1½ cents, the steamer Iron Duke for wheat to Buffalo at 1½ cents, barge Iron State for corn to Buffalo at 1⅜ cents.

The Independent Tug Co. succeeded in raising the fire boat Yosemite on Saturday. Chains were placed under her and a dredge and pile driver raised her. The tugs Wm. Dickinson and Welcome towed the Yosemite into shallow water when she was pumped out. The Yosemite was then towed into Chicago harbor and to the dry dock. The hull was found in good condition, but she will require a new pilot house and engine and boiler and pump houses, some new deck and recalking. Her machinery and pumps will also require considerable repairs.

At Miller Bros.' shipyard the schooner Ralph Campbell was in dock to have a leak stopped, the steamer Puritan for packing stuffing box, the tug Arthur Jones to change her wheel, the barge William B. Ogden for some calking, the fire boat Yosemite for extensive repairs, the schooner J. B. Comstock for some new bottom plank and calking, the schooners Commerce and Charles Marshall to have leaks stopped, the steamer S. K. Martin for new brasses in stern bearing, the steamer Uncle Charley for repairs to stern bearing, the steamer I. N. Foster to have a leak stopped.

The steamer Iron King, light, bound to this port from South Chicago, Monday evening, experienced some trouble with her engine. Capt. Millen blowed distress signals, which were heard by the Jackson Park life saving crew, who telephoned to the Chicago harbor life saving crew to send tugs along, and then went to the assistance of the Iron King. The tugs Wm. Dickinson and Welcome, with the Chicago life saving crew, also went to the Iron King, which fortunately was able to reach Chicago without assistance. The Dickinson towed her up the river to the Santa Fe elevator to load grain.

A test of the newly invented "Harsha" propeller wheel, which was placed on the tug Arthur Jones, was made a few days ago in a run between Chicago pier and Grosse Point, a distance of twelve miles. The Arthur Jones had run the same distance with her old wheel. The time of the two runs was exactly the same, 73 minutes. In the run with the old wheel 8,400 revolutions were made, and with the new wheel only 6,910 revolutions were made, a saving of 1,490 revolutions of the wheel. The inventor claims that his wheel decreases the slip considerably and that in running the first six miles the tug was driven 10 feet by each revolution of the wheel. Taking into consideration the disadvantages under which the first test was made the wheel proved itself a great success. The wheel was much too large for the engine of the tug and the tug's rudder became partly disabled when going out of dock, which retarded her progress on the trip. There was also from 10 to 20 lbs. less steam carried than on the run with the old wheel. The Harsha wheel is a considerable departure from the old style. The hub is 4 feet in diameter and 1 foot wide, upon which are fastened 4 blades which run 3 feet 2 inches lengthwise with the shaft and 1 foot 2 inches in length above the hub, making the diameter of the wheel 6 feet 4 inches. The blades are so set on the hub as to give it a 12 feet lead which can be altered when necessary. The after end of the hub has a tapered cone fixed upon it to prevent suction. The run of the tug was built out to the hub of the wheel and of the same circumference to prevent a drag there.

The question as to whether a vessel can collect freight for coal carried in excess of the bill of lading, is to be tested in the court. In a suit instituted last Thursday the schooner John Shaw was libeled for $1,000 by the Manitowoc Coal and Dock Co., the Wisconsin name of the Columbus & Hocking Valley Coal Co., for coal held in the Shaw to pay for freight excess of that named in the bill of lading.

WILLIAMS.

BUFFALO, N. Y.

Special Correspondence to The Marine Record.

Capt. W. M. Humphrey, vessel owner of Detroit, was at this port on Tuesday looking after the interests of his boats, the Eddy and Shaw.

Capt. James Davidson, of West Bay City, reached here on Tuesday and is attending to the steamer City of Glasgow, now in Mills's drydock for repairs.

Capt. M. M. Graves brought the steamer Fedora down from the Sault, Captain Fick, her master, having been taken ill and sent to the hospital in Duluth.

The new revenue cutter Calumet on her trial trip showed a speed of eighteen miles per hour, and otherwise worked to the perfect satisfaction of the government officials who were on board to inspect her. She will be stationed at Chicago, in charge of Lieut. John Dennett. The boat is considered very fast for her size.

The grain shovelers are threatening a strike on account of Judge Haight's decision in not granting a permanent injunction prohibiting the old officers of the union, headed by President O'Connell, from doing work at the old stand. They propose to notify the elevator proprietors, on Saturday, if not before, that if they do agree to recognize the new union as the lawful body, and allow its officers full access to elevators to look after the interests of its members, they will strike.

The Lake Carriers' Association is starting in on a new campaign of lake improvements, this time in the line of lights and fog signals. Secretary Keep has prepared a petition embodying 10 of these improvements. The light and fog signals to be asked for are for Crisp's Point, Lake Superior; Gravelly Island, Lake Michigan, and at the can buoy off Squaw Island in the Straits. Range lights are wanted at Death's Door, entrance to Green Bay, and Grassy Island, north and south end, Detroit River, a light at the entrance to Grand Marias, Lake Superior, and fog signals at Eagle Harbor, Lake Superior, and at Cathead Point, Grand Traverse Bay. If the fog signal had been in operation at Eagle Harbor it would probably have saved the Pickands this week, as it was thick weather when she went on the reef.

DETROIT, MICH.

Special Correspondence to The Marine Record.

The steamer Haskell, tug Balize and the ferry steamer Sappho were dry docked this week for overhauling and repairs.

Thomas Murphy, president of the Michigan Wrecking and Salvage Co., bid in the steamer Ogemaw at United States Marshal's sale, for $16,000.

The pleasure and ferry steamers are about winding up their season at this port and several will go into winter quarters during the next few days.

The schooner William Home, owned by J. M. Jones, of this port, sunk on the north shore of Lake Michigan on Tuesday night and took six of her crew with her. The cargo, consisting of 579 tons of pig iron, was valued at $10,000, and the vessel at $4,500.

The efforts of Capt. C. H. Starke, of Milwaukee, to settle with the owners of the sweepstakes for the damage sustained in a collision have been successful, and Amboy has been released from the custody of the United States marshal at this port. The steamer Veronica will tow her to Milwaukee, where her damages will be repaired.

The flags on the Volunteer, the schooner Reuben Doud and the tugs Balize and Onaping, were kept at half-mast out of respect for Capt. Hackett, who died Friday morning. Capt. James Davidson, of Bay City, who was visiting this port, expressed much surprise that all the vessels did not show the same mark of respect to the veteran vessel master.

The Detroit Dry Dock Co. will open an office on the Pacific coast about October 1st. Mr. E. A. McAllister, who has been in the Detroit office for a number of years, has been appointed western agent, with headquarters at Seattle or Tacoma. Mr. McAllister is a man of marked ability and one who is thoroughly well qualified to take up the work in a new field.

When Mr. Newman, general manager of the Cleveland & Buffalo Line, was here a few days ago, he was reported as saying that his company had enjoyed a very prosperous season, in fact, had done so much business that they could not give the care and attention to their patrons that they desire to do. "Next season we will have a new steamer and will be able to accommodade our patrons in excellent shape. There will be a meeting of our company for the purpose of considering plans for our new steamer, which we expect to have ready before the opening of the next season."

CLEVELAND, O.

Special Correspondence to The Marine Record.

A. A. Parker, of the firm of Parker & Millen, Detroit, visited this port on Tuesday.

As soon as the Republic discharges her cargo of ore she will be placed in the dry dock for survey and repairs which will be made by the Globe Iron Works Co.

The passenger steamer North West called here on her down trip on Tuesday with a large party of Detroit gentlemen. She left for Buffalo to lay up for the winter.

Capt. J. W. Moore, William D. Becker, Capt. William S. Mack, J. E. McNally, James Walsh and John Warner left for the Islands Tuesday on the yacht L. H. Ware.

The steamer William Chisholm is in the Cleveland dry dock having a new spur piece or shoe fitted from the stern-post to the heel of the rudder. She will be in dock three days.

L. P. & J. A. Smith, owners of the schooner Colonel Cook, ashore at Avon Point, have sent an expedition after her, and if she is not too badly damaged, an effort will be made to bring her into port.

Work is being hurried along on the new freight steamer recently launched from the yards of the Globe Iron Works Co. Her engines are in and the second boiler was placed on Wednesday. The deck fittings are all well along and it is expected that about two weeks more will see her ready for cargo.

Capt. C. E. Benham and Capt. D. McLeod held a survey on the Biwabic at Ashtabula on Tuesday. The estimated cost of repairs was about $400. The same surveyors inspected the Aberdeen at this port on Wednesday. Her repair bill will exceed $1,000. Both damage cases were caused through collision.

The schooner Ironton collided with the steamer Ohio off Presque Isle, Lake Huron, on Wednesday morning, and both vessels foundered in deep water. The crew of the steamer were picked up, also two of the crew of the Ironton. The rest, including Capt. Girard, Mate Bostic and three seamen, are supposed to have been lost.

The vessel owners that attended the Toronto deep waterway convention last week speak in high terms of the courtesies shown them by the municipal officers during their stay in the city. The banquet tendered the visitors on their departure was something elegant and a unanimous spirit of good feeling pervaded the entire proceedings.

One dollar and fifty cents to Niagara Falls and return and $1 to Buffolo and return are the exceedingly low rates the C. & B. Line announce for their excursion Saturday night, September 29th. Steamer leaves wharf, 137 River street, at 6:15 p. m., and returns in time for business Monday morning; allowing the entire Sunday for right-seeing at the Falls. This is the lowest rate ever made from Cleveland for the falls trip, and a very large party will undoubtedly take advantage of it.

A test of a new life preserver made by George Learman, of this city, was made on Monday just outside the breakwater. Fitted to the ordinary cork jacket is a rubber hood. Mr. Learman claims that loss of life in heavy seas and in surf is very often not from drowning, but from smothering, caused by the force of water splashing in the face of the person immersed. The life saving crew took a party out to see the improved life preserver used, and it was found to work highly satisfactorily.

A branch of the hydrographic office has been established in the Superior street tower (room 912) of the Arcade building for the benefit of shipmasters and others. This office is under the United States navy department and no charges are made for services rendered to the marine community. Complete sets of charts and sailing directions for all parts of the world are kept on hand for reference. Nautical information relating to all navigable waters will be furnished to anyone applying. Mercurial barometers, compared and aneroid barometers will be set to the standard by the officer in charge. Masters are especially invited to call at the office.

The daily meetings of owners are continued at this port and the password is "fifty cents on coal to Lake Superior or nothing," all of which is of course very nice in the meeting. There is a feeling, however, in the minds of some that "the d—— is being whipped arouud the stump" on the face of season charters for large blocks of coal, or rather, not on the face of the charter either, for no figures or contract particulars have been shown or seen by anyone. The next call ought to be for a show down of all season contracts and how much is yet to be carried to complete the deal, otherwise "Peter is liable to be robbed to pay Paul." One thing, however, is evident, and that is the vessel owners will stick together when pressed too hard by shippers.

The report of the Chamber of Commerce committee on navigation contains the following pertinent remarks on the harbor question: "Had the Cuyahoga been straightened a few years ago and a progressive policy governed in redeeming year by year the river for navigable purposes, enough dockage in addition to what we now have would have been secured to handle thirty of our largest vessels at a time, a capacity in itself exceeding that of Ashtabula Harbor or any other port near us. It would have meant more than that; it would have saved the time now lost in getting empty ore cars through a crowded district, over numerous bridges, and held to Cleveland the vast proportion of the ore trade which has gone to other ports simply from the fact that it could not be handled here. Let it be thoroughly understood that for all practicable purposes we have reached our maximum capacity as far as taking care of lake freight is concerned. If this city wants more of it she must provide more room."

Vessel owners no longer intend to carry cargoes of coal at a losing rate of freight and on Tuesday passed the following resolution: "We, the undersigned, hereby solemnly agree to and with each other and each with all the other subscribers hereto and each pledges himself that for thirty days from date we will not make or be a party to any charter for ourselves nor for others as broker or otherwise, directly or indirectly, of any tonnage whatever and will not permit to be chartered any tonnage we own or control directly or indirectly to carry soft coal from any Lake Erie port to any port on Lake Superior, either shore or the head of the lake, at a less freight than 50 cents per net ton, and we each agree to submit to the secretary of this meeting a list of our contract coal and to report daily hereafter vessels put in on contract." The secretary was instructed to notify all the big out of town owners of the action taken and it is expected that they will nearly all join the movement. An effort will be made to get the managers of the steel steamers owned here that are still out to sign the agreement.

DULUTH AND SUPERIOR.

Special Correspondence to The Marine Record.

The Ely is out of dry dock, after being recalked and a few new planks put in. She was damaged by getting on the rocks near the Soo.

William Johnston, the head of the Johnston syndicate of the English whaleback company, left Liverpool on September 1st and is expected here this week to confer with Capt. McDougall. The captain will be back on Tuesday or Wednesday from the Pacific coast.

The Duluth and Iron Range road is making plans and estimates for an additional ore dock that is hoped to be built this winter. The road expects to be prepared to handle a good deal more ore than ever before, and will have considerably more equipment before another season opens. The Duluth, Missabe & Northern also expects to have much more equipment for the ore trade before the next spring.

Bids were opened Saturday for the dredging of the harbors of Duluth, Superior aud the Portage Lake, under the last river and harbor bill. The successful bidders for Duluth and Portage Lake were the Duluth firm of Williams, Daugherty & Upham, while Capt. Barker took the Superior work. His bid on this was lower than any dredging has ever been done for at this place—12 cents a yard. There were the usual bidders from below. This is the first time that the Portage Lake work has been taken by a firm away from the lake.

The new Northwestern dock at Allouez Bay has been put into use, the Alverson discharging a coal cargo there. The dock is in good shape to do excellent work in the near future, and will handle a number of cargoes this fall. It has a channel along the entire front 20 feet deep and probably 85 feet wide, though it is said to be 100 feet wide. The entrance to the dock is from the channel that leads to the Duluth & Winnepeg dock, from the Superior entry, and cuts through a little point of land that sticks out into the mouth of Allouez Bay. When a small amount of additional dredging has been done it ought to be easy to get into.

Gen. O. M. Poe, who is here as a member of the U. S. commission to decide on the deepening of the harbors of Duluth and Superior to twenty feet, said to-day that while August had been the record breaking month of the Sault canal, September would surpass it and lead any month in the history of the canal. This he predicts on the basis of the tonnage so far in the month. Gen. Poe and Majors Sears and Gregory met to discuss the question. They told your correspondent that the entire matter was one largely of estimates, and that while the act read so as to be construed into deepening the entire harbors of both cities, they would consider only the deepening and widening of the channels. An effort is to be made to bring before the board the feasibility of using in dredging operations the hydraulic dredges such as are in use at the work of the Northwestern dock. This would make a great saving in that it would build ground while dredging, but as the dredging would cost far more than now, it is not at all likely that the board will recommend a change unless favorable arrangements can be made with dock and property owners, and this is not at all probable.

Grain receipts at the head of the lakes are surprisingly light for this season, but one new feature is the great amount of flax being received, twenty-nine cars having come in yesterday. This year three flax inspectors are required and are kept busy. At present there are nearly 2,400,000 bushels of wheat in store on both sides of the bay. During the past week the stocks actually decreased about 2,400 bushels, with light shipments. The destruction of the Eastern Minnesota Railroad bridges was a business calamity for that line, and particularly so as this season, when grain and flour were moving in great quantities. The company made a traffic arrangement with the St. Paul & Duluth, but, as it permits the moving of but two trains each way daily, it affords very little relief when the volume of business is considered. These bridges are now rebuilt, but the expected increase comes not. Wheat rates to Buffalo are unchanged at 2½ cents and a cargo or two has been taken for Kingston at 4 cents. The ore rate is firm and steady at 85 cents per ton. Lumber is being moved at an advance of one shilling for the week. The Chicago rate is $2 per 1,000 feet, and the Tonawanda rate $1.87½ to $2 per 1,000 feet. Coal is being brought up at 50 cents per ton soft, and 30 cents hard; some late charters at 45 cents. The week's shipments of wheat have been about 615,000 bushels. Ore shipments have been very heavy, probably not less than 75,000 tons. About 4,500,000 feet of lumber were shipped during the week.

FOUNDERING OF THE SCHOONER HOME.

The schooner William Home, consort of the F. R. Buell foundered off Seul Choix Point, early Wednesday morning, during a heavy southerly gale. One survivor drifted ashore unconscious and was taken charge of by the light-house keeper. The remainder of the crew were lost.

The Home left Manistique on Tuesday night in tow of the steamer Buell with two other consorts and had on a cargo of 579 tons of pig iron for Buffalo. At about 10:30 p. m., the deck load shifted and the schooner heeled over until she foundered.

The crew of seven succeeded in getting into the yawl, which soon afterwards capsized. All except Manga were washed from the overturned yawl, but he succeeded in holding on and finally drifted on the beach, near Seul Choix light. He was picked up there on Wednesday afternoon by Joe Fountain, the light-house keeper. It was with great difficulty that he was brought back to consciousness. The Home's cargo was valued at $10,000 and insured for $9,500.

The schooner, William Home, was commanded by Capt. C. H. Henderson, who lived in Mexico, N. Y. She was owned by J. M. Jones, of Detroit, and was built in Clayton, N. Y., by Johnson in 1871. 290 tons register, was rated A2 and valued at $45,00. She was partly insured for $2,500 in Union & Reliance, Marine and other companies.

A LETTER FROM CAPT. FREITSCH.

The wife of Capt. Adolph Frietsch, whose voyage across the Atlantic in the little sailboat Nina has attracted so much attention, has just received a letter from him in which he speaks about his trip and of his safe arrival on English soil. The letter, which is dated at Queenstown, Sept. 12, reads as follows:

"I have crossed the Atlantic ocean after all. I wrote a letter when I was half way across the ocean, which the English steamer Menantic took to Baltimore. I see from American papers that the steamer has reported me correctly, and I recognize also that I was reported lost. I encountered no mishaps, only constant stormy weather But I was so hardened against all danger that I cared nothing for it. I rode at full sail, although the boat sprung a leak, and here I am. I reached the lighthouse of Peargh on the Irish coast about one hour later than I expected, and I sighted it precisely in the direction which I had figured on. Then I lay, owing to a complete absence of wind, for three days near the coast, and this noon I reached Queenstown. Correspondents of New York papers met me immediately I landed, which leads me to conclude that my arrival will be known to you long before you will see this letter. I intend to remain here some time. Then I shall visit several other places. The people here seem to think I have accomplished a miracle, but I cannot see anything wonderful in it, and believe that any seaman with a thorough practical and theoretical schooling could do the same thing. Of course one must have strong nerves to grow fat on such a journey, and this has actually happened to me since I left New York. It is wonderful though, to think how many thousand miles these pine boards which I have nailed together in Milwaukee have carried me through storms and over waves which shake up much larger crafts. But I am here nevertheless."

ITEMS FROM THE LOG BOOK.

Capt. James Warwick, Sr., aged 78, for 50 years a sailor on the lakes and commander of several vessels, is dead, at his home near Sarnia.

Capt. Frazier, who was taken sick at Ashland and was compelled to stay ashore in thc hospital, is out of immediate danger and in a fair way to recovery.

The steamer Iron King, which was on Hyde Park reef, Tuesday night, loaded grain at Chicago, as it was found after a careful survey that she was entirely uninjured after the stranding.

Adam Kiouki, the Indian diver at Mackinaw City, did some good work at ship carpentering on the steamer Robert Mills, while she was sunk at Waugoshance. Capt. John Rice, the Buffalo shipbuilder, said that the Indian had done a better job in 20 feet under water than some men would have done on land. It is estimated that repairs to the Mills will cost between $8,000 and $10,000.

The lake life-saving surfmen were enlisted April 1, at $65 a month. On August 4th an act of congress was passed fixing the compensation of surfmen employed more than eight months at $60 a month, and if the stations do not close exactly on December 1 the $65 men will be entitled to only $60 under the new law. It is thought the solicitor of the treasury, to whom the matter has been referred, will decide that the law cannot impair this season's contracts. After due consideration the solicitor finds that the said act was not intended to apply to existing contracts with surfmen at lake stations.

The largest raft of pulp wood ever towed to Green Bay was taken in by the tugs Samson and A. J. Smith. It contained 8,000 cords of bolts and was 2,500 feet long by 1,500 feet wide, this being equal to an area of 3,750,000 square feet, so it is claimed. Capt. Johnson, of the Smith, claims it is the largest raft of any kind ever towed on the lakes. It was started from Lockport harbor, Georgian bay, and 14 days were occupied in the trip.

More tests of the use of oil as a fuel on the tugs in the Chicago harbor are to made at once under the supervision of Chief Smoke Inspector Adams, who has just returned to Chicago from the east, where he made further investigation of the fuels in use in the eastern cities on tugs. He also saw the authorities of the war department at Washington and perfected arrangements whereby tug owners can secure the necessary permits to fit their tugs with oil burners upon application to the department, and will insist that the tugs adopt oil as a fuel.

MARITIME LAW.

NATIONAL STEAMSHIP CO. v. STEAMSHIP HEKLA.

U. S. District Court, Eastern District of New York.

SALVAGE—STEAMSHIP WITH BROKEN SHAFT—TOWAGE AT SEA—RIGHT OF CARGO OWNER TO PARTICIPATE IN SALVAGE. The steamship Hekla, when 1,500 miles from New York, broke her thrust shaft, and was thereafter taken in tow by the steamship America, and arrived safely in New York. The thrust shaft was repaired three times, and during part of the time while the America was with her, and on arrival at New York she was able to proceed under her own steam. Hence, while not disputing that a salvage service had been rendered, the owners of the Hekla claimed that she required assistance to expedite her progress only. The Hekla and her cargo are worth $213,000; the America, her cargo and freight were worth over $460,000; she was delayed twelve days. Held, that the Hekla with her shaft broken was in a position of peril, and for the salvage service rendered the America should receive $30,000. At the time of rendering the service, the America had on board certain live cattle. The owner of these cattle alleged that they had been injured by the delay, and hence claimed to be entitled to a portion of the salvage awarded. Held, that he could not recover.

Benedict, Judge.

This is an action to recover salvage compensation for services rendered the English steamship Hekla by the National steamship America in April, 1893. The Hekla, being a steamship of 2,113 tons, bound to New York, having a cargo on board consisting in part of exhibits to the World's Fair, and 843 passengers, on March 24, when about 1,500 miles from St. John, Newfoundland, broke her thrust shaft. The shaft was repaired, and on the evening of the 25th the steamer proceeded under steam towards New York. On the 27th a council of the officers of the steamer was held at which it was decided to accept the first assistance offered, "as the ship during the 24 hours had only made 110 miles in calm weather, and the first and second engineers declared it would not be advisable to make revolutions * * * and also that the repaired shaft might again break." Thereafter she signalled the steamship Normandie, bound to New York, but assistance was refused her and she proceeded slowly. On April 1st the repairing to the shaft gave way and the ship, lying in the trough of the sea and rolling heavily, became helpless. About twelve hours aftewards she signalled the steamer America, a steamer of the National Line, bound to London. At her request the America lay beside her, the heavy weather making it impossible to make fast until April 3rd, when the tow line was made fast and the America proceeded to tow the Hekla towards Halifax. Meanwhile an attempt to again repair the thrust shaft was being made, which succeeded in enabling steam to be used. At the request of the Hekla, the America then changed her course for New York, the engine of the Hekla assisting at a moderate speed. On April 4th the repairing to the shaft gave way and the engines of the Hekla stopped. For the third time repairs to the shaft were undertaken, the America proceeding on her course to New York. On April 7th, when the steamer had reached pilot ground, the repairs to the shaft were completed, but the Hekla did not connect her screw until after the pilot had spoken her, which was on the 9th of April. Thereafter the Hekla used her steam until the towing lines of the America were finally cast off near the Sandy Hook light, and the Hekla went to quarantine under her own steam. The America proceeded to her wharf in New York, took in fresh coal and fodder, and shortly after resumed her voyage to London, having disbursed for coal, fodder and port bills $3,684.05. Much of the time during the rendition of this service by the America the weather was heavy, part of the time the wind blowing a gale, in which the Hekla's line parted. The Hekla was in danger of being short of provisions, and was supplied with beef, milk, butter, etc., by the America. The value of the Hekla in her condition on arriving was $70,000; the value of the cargo of Chicago exhibits, $90,400; the value of sundry merchandise, $52,900, rendering the total amount subject to salvage $213,300. The value of the America was $200,000, and she had a cargo valued at $248,000, and freight amounting to $13,510.

That a meritorious salvage service was rendered by the America to the Hekla is not disputed, but the claimants insist that a very moderate compensation should be allowed upon the ground that the Hekla was not disabled by the breaking of her thrust shaft and only required assistance to expedite her progress. This position is based upon the fact that the Hekla's shaft was repaired and able to work by the time she reached New York. Reference is made to the case of the Umbria, which vessel was navigated safely into port, a distance of 800 miles, with a mended shaft, without assistance. I cannot agree that this is a case of acceleration only, for while it is true that the Umbria was navigated in safety with a repaired thrust shaft, nearly the same distance as was navigated by the Hekla, and while it is also true that in this instance the Hekla's thrust shaft was repaired three times, still this does not satisfy me that the delay was the only danger to which the Hekla was exposed. How long the Hekla's shaft as finally repaired would have endured cannot be told. Each time it was repaired before, it broke, and it appears in evidence that her owners, having on her arrival in New York an opportunity to ascertain the nature of the repairs made to the shaft, became satisfied that it would be unsafe to send her home again in that condition, and accordingly detained her in New York until a new shaft could be brought out from the other side. This shows, as it seems to me, that in the opinion of maritime men, a steamship on the ocean with her thrust shaft broken is to be considered in a position of peril, although the shaft may be repaired on board. The officers of the ship thought her in peril, for although they had repaired the shaft, they determined in council to take first assistance that should be offered. In view of the character of the property saved; the number of passengers on board the Hekla; the peril to passengers and to cargo; the constant exertion put forth in rendering the service—the master receiving severe injury in its performance; the skill displayed in the towing, and the successful result of the effort; considered the value of the property at risk; the value of the salving vessel, and the resulting delay of twelve days, I am of the opinion that the sum of $30,000 is a proper salvage compensation. To this sum I add the amount of money actually expended by the America in recoaling, etc., in New York.

The America at the time of the rendition of this service had on board 160 head of live cattle which she was transporting to London. The owner of these cattle has intervened in this action and claims to be entitled to share in the salvage award because of the fact that the detaining of his cattle on board the America during the twelve days that she was engaged in the rendition of this salvage service caused injury to his cattle. But the case of this shipper is similar to that presented in this court in the case of Goldsmith vs. North German Lloyds (23 Fed. Rep. 820). The decision in that case compels the dismissal of the petition. Following that decision the petition of the intervenor is dismissed, but without costs. Let decrees be entered in conformity with this opinion.

AMPLITUDES.

The following approximate amplitudes of the Sun's rising will be given each week in this column during the season of navigation: A second bearing of the Sun may be taken at sunset by reversing the bearings to read west instead of east, as, for example, E. ½ S. for a sunrise bearing would read W. ½ S. for a sunset, or E. 4° S. to W. 4° S.

LAKE ERIE AND S. END LAKE MICHIGAN LAT. 42° N.

Sunrise.	Bearing (degrees.)	Bearing (points.)
Sept. 25	E. 1° S.	E. ⅛ S.
Sept. 30	E. 4° S.	E. ⅜ S.

LAKE ONTARIO, S. END HURON AND CENTER LAKE MICHIGAN LAT. 44° N.

Sunrise.	Bearing (degrees.)	Bearing (points.)
Sept. 25	E. 1° S.	E. ⅛ S.
Sept. 30	E. 4° S.	E. ⅜ S.

N. END LAKES HURON AND MICHIGAN, LAT. 46° N.

Sunrise.	Bearing (degrees.)	Bearing (points.)
Sept. 25	E. 1° S.	E. ⅛ S.
Sept. 30	E. 4° S.	E. ⅜ S.

LAKE SUPERIOR LAT. 48° N.

Sunrise.	Bearing (degrees.)	Bearing (points.)
Sept. 25	E. 2° S.	E. ⅛ S.
Sept. 30	E. 4° S.	E. ⅜ S.

With a compass correct magnetic, the difference between the observed and true bearings will be the variation for the locality. If there is any deviation on the course the vessel is heading at the time of taking the bearing the result after the variation is applied will be the amount of deviation on that course.

CORRESPONDENCE.

☞We do not hold ourselves responsible in any way for the views or opinions expressed by our correspondents. It is our desire that all sides of any question affecting the interests or welfare of the lake marine should be fairly represented in THE MARINE RECORD.

COMMENTING ON PRESENT WIND SIGNALS.

LAKE HURON, September 25, 1894.

To the Editor of The Marine Record:

Your editorial in the RECORD of 13th inst., correcting the impressions caused by the late change in wind signals by the U. S. Weather Bureau are timely. I believe more information on this point of some value, whereby this signal could convey more accurate intelligence of what is expected to follow the hoist. The late change, however, has not added any additional information to the hoist adopted, but the reverse. The discarded cautionary signal gave some idea of what to expect and also the direction, so that masters afloat could govern themselves accordingly. The information signal now adopted fails in giving this important information to those navigating the lakes, and would appear only to benefit masters and others interested while in port, they formerly, as now, obtained all the intelligence at hand from the courteous officers of the various port stations, or from their daily bulletins. There is no night signal to warn seamen on the lakes, or even when in port, connected with this display, nor any information as to the direction which moderate gales may be expected from which I believe masters and others consider very essential in all wind display signals, this adds to their value afloat as well as in port, all being nearly equally benefited.

The change, however, was no doubt intended to further aid in simplifying the method of giving information to masters, owners and others while in port, but those at sea seems to have been lost sight of, though certainly the latter are often in greater need of storm warnings than those in port, but there are more at sea passing many of these valuable signal stations strung along the chain of lakes on their passage, where they look for warnings of approaching changes of weather, information of such is most desirable in many cases when weather appears threatening, this information which is liable to be very essential for the safety of their craft, tow barges deeply loaded, rafts, etc., cannot be obtained without loss of time by lowering a boat and pulling ashore after the information that could be fairly imparted by the hoist displayed.

If shipmasters and others interested would freely express their opinion on this important subject, one of the most useful aids to our lake commerce. I have no doubt the always courteous officials of the U. S. Weather Bureau would willingly consider the opinions expressed, and readily adopt such hoists suitable to convey the information so freely given and appreciated afloat, as well as in port. I believe the discarding of the cautionary signal is a mistake, until a signal more explicit had been adopted, which is not the case at present, it lacks the information required in general. The cautionary signal signified moderately heavy weather with direction, day or night; the present gives neither. Surely this could be improved on if this signal is continued. I feel satisfied that the officials of the weather bureau with the suggestions of our lake masters can devise hoists that will fully meet the requirements of seamen afloat, as well as those intending to leave port, a feature which the present information signal has not done formerly, or now, being only a port signal. These remarks are made in the interest of our lake shipping which truly deserves all the aids and information the different branches of our government can afford, therefore no reflection is intended in any way on that valuable department; the U. S. Weather Bureau, or its corps of officers, its aids and information to shipping and peneral commerce are beyond question in its usefulness on salt and fresh water. Hoping by this to call attention only to an inferior display of imparting information to what was in use previously, I remain,

LAKES.

THE Port Huron *Herald* is responsible for the following: "J. Prabian was a deckhand on the steamer John Owen and Davy wanted men in the other world, made a call, into the hold head first went Jimmy and was in the other world before he knew what hurt him, which is the right way to leave this land where yellow dirt is worshipped night and day."

THE NEW AMERICAN LINER ST. LOUIS.

The Wm. Cramp & Sons Ship Building Co. will launch about October 20 the steamship St. Louis, the first of the boats to be built for the American Line in Philadelphia.

The gross register of the St. Louis will be 11,000 tons, which is 500 tons greater than either the New York or Paris. Following are the dimensions:

Length over all	554 feet
Length on load water line	536 feet
Extreme beam	63 feet
Depth of hold	42 feet
Draft of water	26 feet
Gross register	11,000 tons

The Paris measures only 526 feet on the load water line and, as already stated, registers only 10,500 tons.

In appearance the new ships will differ entirely from the Paris and the New York, inasmuch as they have straight instead of clipper stems, and carry two funnels and two instead of three masts. The masts will be ordinary pole masts with a fore and aft or schooner rig.

The hull of the St. Louis is about complète and she is entirely decked and plated and the St. Paul, her sister ship, is plated up to within one tier of the main deck. Over 4,000 men are at work, in various ways, on the hull, engines and boilers of these two ships.

The St. Louis will have six decks. The promenade deck extends the whole length of the vessel without a break. All of the decks will be covered with wood planking.

The engines are of the most modern and powerful type, being quadruple expansion, and are designed to develop at least 10,000 indicated horse power each. They will thus give not less than 20,000 horse power for the ship, against 18,000 horse power for the Paris. Each engine will have four cylinders, respectively of 36, 50, 71 and 100 inches diameter. The piston stroke is 60 inches. Six steel double-ended boilers, each 20 feet long and 15 feet 7½ inches in diameter, will furnish steam at about 200 pounds pressure. There are forty-eight Purves furnaces, 39 inches in diameter, fitted with Serve's patent tubes. The total grate surface will aggregate about 830 square feet, and the heating surface about 30,000 square feet. The crank shaft, eccentric straps, and connecting rods will be of forged steel, and the piston rods will be of ingot steel. The valve gear will be of the link type, controlled by a steam cylinder and also by an auxiliary hand gear. Many features have been added to insure the perfect working of these engines. The columns will be of cast steel, forked bottom. The thrust blocks will be of the usual horse-shoe type, and the thrust shafts about 13 feet long. The line shafting will be of forged steel, and the bearings of cast iron. The air pumps will be attached, but the condensers will be independent. The engines will be the most interesting feature of these ships on account of the great power they are expected to develop. This is the first time an effort has been made to use the quadruple expansion principle in engines of over 4,000 indicated horse power, and in only one or two instances has it been applied to engines of that power. To comply with the terms of the contract the builders will have to show by an extended sea trial that when working under ordinary sea-going conditions the vessels are to be easily capable of maintaining a speed of 20 knots per hour.

FIRST OF THE SCREW STEAMERS.

With all that has been said of early ocean steamships and the historic transatlantic voyages of the paddle steamers Savannah, Sirius and Great Western, away back in 1838, the fact is less well known that the real forerunner of the mammoth screw steamers of the present day was the steamship Great Britain, which began building in 1839 and was launched in 1845, having the credit of being the first screw steamer to cross the Atlantic. Like the Great Western, to which, perhaps, belongs the real honor of having opened to commercial and passenger traffic the Atlantic ferry of to-day, though preceded by four days by the Sirius, which latter, however, was withdrawn after a second voyage, while the former continued successfully in service for several years. The Great Britain was built by the Great Western Steamship Co. Her length over all was 322 feet; her beam a little over 50 feet; her depth, 32 feet and her displacement at a load draught of 18 feet, 3,618 tons. Her first voyage from Liverpool to New York was commenced on July 26, 1845, and occupied nearly 15 days, the average speed during the run being nine knots an hour.

After remaining on view about a fortnight in New York harbor the homeward passage to Liverpool was successfully accomplished. Voyages back and forth were made with satisfactory results until the autumn of 1846, when, on a very dirty night in the month of September, she was stranded off the coast of Ireland. There she remained for 11 months, through a tempestuous winter, until she was finally floated in the following autumn and taken to Liverpool for repairs. After a complete overhaul the vessel entered on a new era in her existence, being put by her new owners into the Australian trade, where she retained the name of being a splendid sailer and a fairly successful steamship. Entering upon this trade in 1853 she remained in it for 21 years, until the requirements of modern passenger transit had outgrown her capabilities. Finally her propelling machinery was removed and only a few years ago she was transposed into a full rigged sailing ship and made one or two trips around Cape Horn. Later she was taken into Port Stanley, Falkland Islands, almost a derelict and at present she is doing duty as a coal hulk either at Gibraltar on the west coast of Africa or at one of the Pacific islands.

PROMOTION BY MERIT.

Ambitious young men of good habits and sterling character will enter the merchant service, but will not ship in the United States navy, because there is no promise of a future for them there. They may spend the best years of their lives in learning the routine of duty on board of a man-of-war without the possibility of ever getting beyond the position of petty officer. In the merchant service a likely, deserving sailor has an incentive to spur him to greater efforts in the knowledge and belief that he may in time be a mate, a captain and perhaps the owner of his ship. How many ambitious young men of this country have passed successively through these grades, and are retired captains and successful merchants to-day? An American citizen devoid of a laudable ambition to excel in whatever he undertakes, is not one from whom the country may expect the best results in defending its flag upon the sea.

WATER TUBE BOILERS ABROAD.

The English board of trade seem to have set their face against the adoption of the water tube boilers in merchant vessels, and lately one or two ship builders have had some lively interviews or correspondence with the officials. It was proposed, for instance, to adopt the water tube boilers in a new liner being built on the Clyde for long distance sailing, and as usual the board of trade had to approve. But while Lloyd's and Bureau Veritas were quite satisfied, and offered serviceable certificates the board of trade opposed the introduction of the tubulous boiler, putting forward demands which were regarded as forfeiting all chance of success. The result was that the Scotch cylindrical tubular had to be adopted against the desire of the owner. It is well known that a British steamer, the Nero, of Hull, has been fitted with the Babcock and Wilcox water tube boiler, but this was also a case of fighting. The inimical attitude is all the more annoying as many foreign competing ships are fitted with the tubulous boiler, with the result that they are safer than the old boiler, and very easily repaired even when the steamer is under way, and the marked saving in weight admits of a greater cargo being carried for the same expenditure in propulsion. The contention is that the board of trade ought to take the same step as Admiralty, who sent an experienced marine engineer to the east in a French mercantile steamer to study the working of the tubulous boiler, and thus gain that experience without which the board of trade may not desire to authorise its use.

SHIPOWNERS' LIABILITY.

It is provided by act of congress that "the individual liability of a shipowner shall be limited to the proportion of any or all debts and liabilities that his individual share of the vessel bears to the whole; and the aggregate liabilities of all the owners of a vessel on account of the same shall not exceed the value of such vessel and freight pending." Under this law a part owner is exempt from liability for more than his proportionate share of the debt unless he personally makes a contract, or adopts the liabilities involved as his own after it is made.

CHARGED WITH ASSAULT.

Capt. John Patterson, master of the schooner Belle Brown, was arrested in Milwaukee a few days ago charged with assaulting one of his crew. The alleged assault occurred at Spencer Pier on Lake Huron on September 2. The vessel was trying to make a landing and two sailors were in a small boat assisting in the attempt. The captain swore at them for some cause and they threatened to quit work if he swore at them again, whereupon the captain is said to have assaulted one of them.

The United States district attorney's office and Commissioner Bloodgood are at variance over the case of Capt. Stines, of the Virginia, who was recently discharged by Commissioner Bloodgood after he had been arrested on a charge of assaulting a seaman for refusing to obey lawful orders. The district attorney's office maintains that a prima facie offense was proven against the captain, which was sufficient to hold him, and the commissioner had no right to convert the examination into a trial and decide points that should have been left to the court or a jury so that there are two similar cases now pending and their outcome will be watched with a degree of interest by seamen.

HAVING THE RIGHT RING.

THE RECORD is singularly fortunate in having among its list of patrons and subscribers some, if not a majority of the most appreciative men that ever breathed God's air. The following is an index to the many similar communications regularly received at this office:

"Please find enclosed a check for $2 payment in advance for my subscription to THE MARINE RECORD for 1895. THE RECORD has been a regular visitor to this office for many years holding abreast of the times, bright and newsy, at the wheel always, taking a leading hand in discussing what is beneficial to the best interests and progress of lake shipping and all connected therewith. I Iope that the coming year will add further prosperity and success to THE RECORD'S popularity which your efforts in behalf of the lake marine in every capacity certainly deserve."

RESOLUTIONS PASSED BY THE CITY COUNCIL.

The Cleveland city council passed the following resolution on Monday night:

"WHEREAS, The encouragement of the marine trade and interests of our city has been greatly impaired by the neglect of proper legislation on the part of our city government to afford facilities for entering that part of the harbor known as the Cuyahoga River, and

"*Whereas*, The federal government has expended large sums of money in the construction of a substantial and permanent breakwater, thereby affording safe ingress and egress to the river proper, and

"*Whereas*, By reason of the inability for heavily laden vessels to navigate the river with so narrow a channel has thereby prevented the unloading such vessels in our harbor of a large amount of iron ore and other minerals, and the loading and shipment in the same vessels of merchandise from our own city to other points; therefore be it

"*Resolved*, That a special and open meeting of this council be held on Wednesday evening, October 3, 1894, at 7 o'clock sharp, for the purpose of conferring with the chamber of commerce, or delegation or committee thereof, or citizens generally, relative to hearing any suggestion and plans as may tend to formulate any procedure that may be necessary to bring about a much needed improvement of the Cuyahoga River."

THE LAKE TRADE.

The Cleveland Chamber of Commerce calls attention to the lake trade in the following terms:

"The commercial importance of the city of Cleveland is due her commanding position on a chain of lakes on which waters float a commerce the magnitude of which no mind can comprehend. When in 1892 over 11,000,000 freight tons passed the Sault, the attention of the whole commercial world was arrested by the proportions of the transaction. It was the largest year in the history of lake carriage and people were astounded to note that through the winding St. Mary's more tonnage was carried than all the traffic of the Orient and Europe through the famous Suez. Eighteen hundred and ninety-four has been a year of financial depression and no business has felt the effects of paralyzed trade as the iron industry. It will come with some degree of surprise to the members of the Cleveland Chamber of Commerce and no less of pride, we trust, to know that in the five months up to September 1, 1894, more than 500,000 freight tons of ore, lumber and other commodities has passed through the Sault than during the same months of 1893; that more than 1,500,000 tons of ore have passed the Sault in the same five months than in the corresponding months of 1893, and finally but little doubt exists that the year will close with a record of 12,000,000 freight tons locked through the Sault, thus in a year of calamity and discouragement exceeding the high water mark of 1892 by 1,000,000."

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CLEVELAND, O., SEPTEMBER 27, 1894.

IT IS estimated that between 600,000,000 and 700,000,000 feet of sawed timber will go out of Lake Superior this season, and every thousand feet of it represents $7 expended for labor. The trade, too, especially from the western part of the lake, is but in its infancy.

THE effect of the Wilson tariff bill placing lumber on the free list is already being felt at lake ports, large quantities of Canadian lumber having been shipped to Saginaw Bay and Oswego, N. Y. The Saginaw Bay lumber firms say that the wages paid to their men will have to come down, as the Canadian competition is too strong to admit of paying the former rate of wages at American lumber camps.

THE lakes have furnished the Pacific coast with men of marked ability in shipbuilding, engineering and kindred interests and many important industries are now being carried on there with lake men at the helm. The whaleback shipyards at Everett, Wash., is a notable instance of lake ship building enterprise, and now it is learned that the Detroit Dry Dock Co. will be represented on Puget Sound. There is a wide field for business on the Pacific Slope, no little of which ought to be made tributary to the lakes.

THE glory of Capt. Andrews, the Yankee skipper, and the little dory in which he crossed the Atlantic to the Columbian festival at Madrid, Spain, has been eclipsed by the nautical feat of Capt. Adolph Frietsch with his tiny schooner-rigged skiff Nina. Capt. Frietsch crossed the Atlantic alone from New York harbor to the port of Queenstown in practically a small flat-bottomed skiff in thirty-eight days. The fame of the Finland mariners has received fresh luster from this plucky sea voyage of Capt. Frietsch who started out from Milwaukee, Wis., in a little craft built by himself and successfully carried her across the Atlantic.

EVERY congress sees a few more foreign built craft placed under the American flag as if we had not the facilities and skill to supply all the mercantile tonnage required to carry on the commerce of the country. We hold that it is equally disgraceful to go out of the country for fancy tonnage, such as private yachts, etc., or mercantile tonnage, as it would be to place orders abroad for naval or government vessels and if the lawyers at congress had but the faintest idea of the way this registering of foreign bottoms under the American flag cuts into the scores of industries connected with domestic shipbuilding we feel sure that their sense of justice and patriotism would no longer permit them to issue these favors indiscriminately to foreigners to the derogation of their own constituents and a general loss of national prestige. During the second session of the Fifty-Third Congress now closed we note the placing of the foreign built steamers S. Oteri, Oceano, Goldsworthy, El Callao and the bark Skudesnaes, also the schooner Astoria, all under American registry. Of course under certain conditions an American citizen should have the privilege to nationalize his foreign built floating property, but the lines can not be too tightly drawn in holding within check all attempts to foist upon the country the exclusive workmanship of aliens as represented in the completion of one or more large steamers.

A WATERWAY TO THE COAST.

Aside from the international bearing of the question involved in the power, rights and jurisdiction of a joint ownership, the cost of connecting the lakes and ocean by a 20-foot channel by way of the Canadian chain of canals, or the alternate of constructing a national waterway from Lake Erie by the Erie canal, would be so great that both the Canadian and the United States governments may well hesitate at undertaking such a departure, and the utmost that may be expected from either is a careful investigation of the engineering possibilities and necessary expenditure. Some of this work has already been done on the basis of an enlargement of the existing canals, though not to the size and depth recently proposed.

The magnitude of the lake commerce and its continuous growth plays a most important part in the business of the country, and benefits the entire population; further, ample returns is annually made for every dollar expended in the improvement of the great chain of waterways.

Taking all the expenditures of the government into consideration, no money has been more profitably spent or promises to be of equal lasting benefit.

Before the policy of deepening the channels between the lakes and improving the harbor facilities was vigorously entered upon, the lake commerce was carried on in vessels ranging from 300 to 500 tons and drawing less than 12 feet of water. With the deepening of the waterways and harbors to fourteen feet and then to sixteen feet, larger craft were built, sailing vessels gave way to steam, and instead of 300 to 500 tons of coal or ore on a single bottom, cargoes now range from 3,000 to 5,000 tons and even higher where the channels have been sunk deeper. With every additional foot of depth gained in waterway and consequent increase in size of cargo, the cost of transportation has decreased so that producers and consumers have been brought nearer together, and both have benefited.

Before long a twenty-foot waterway will have been made through the wise liberality of congress. When that has been secured there will be an increase in the carrying capacity of vessels and a consequent wide-reaching benefit to commerce.

LOST TONNAGE REPLACED.

The loss of the steamer Pickands on Eagle River reef, while mainly due to the master shaping an insecure course, was brought about through the lack of proper aids to navigation, as if a fog horn or other means of warning a vessel of her proximity to the dangerous reef had been established this fine staunch steamer, valued at $85,000, would have been now afloat.

The collision on Lake Huron, Wednesday, between the schooner Ironton and the steamer Ohio, when both vessels foundered with a sad loss of life and valuable cargo, calls for a close investigation to get at the facts in the case as under nearly all conditions a steamer is required to keep clear of a vessel under sail.

The schooner Home which foundered with a cargo of pig iron, on the north shore of Lake Michigan, on Tues- was a vessel of a bygone day and her type is fast being wiped out, but it is to be regretted that as this class of tonnage is being taken off the list, so also do they usually carry lives away with them, and in this case six men had to perish to end up the career of another canal schooner.

The old Colonel Cook, of Augusta fame, beached herself once more close to Cleveland, luckily without loss of life, and this will probably end her history.

The five vessels named represented about five thousand tons carrying capacity and a cash value, including cargoes, etc., of nearly $200,000. The worst feature, however, is the loss of eleven hands, a loss to the widows and orphans which can never be replaced; as for the tonnage, a Cleveland shipyard will in the course of a few days duplicate the lost carrying capacity and aggregate value of the fleet by putting into commission a large new steel freight steamer, built to a high class, fitted with all modern improvements, and capable of withstanding lake storms for a period of even fifty years to come.

OPENING OF THE CANADIAN "SOO" CANAL.

Water was let into the Canadian ship canal Monday night and the work stood the test of the water perfectly. All that now remains to be done to complete the lock is to place the gates in position, install the machinery for the operation of them, and remove the dams at the upper and lower entrances of the canal. It is expected that the great enterprise will be ready for navigation within a month at the latest. The water was let into the canal to enable the contractors to float the gates on pontoons and put them into place.

The Canadian ship canal is similar in design to the new United States ship canal now under construction on the American side of the river and is a magnificent piece of engineering skill. The amount appropriated for the canal was $4,000,000, an it will be completed within that appropriation. Work was commenced by the contractors, Hugh Ryan & Co., on May 1, 1889. The length of the canal is 3,700 feet, running through a neck of land jutting out from the main land. The masonry walls are 1,106 feet on either side. Around the gates the walls have a uniform width of 25 feet. There will be but one lift to overcome the 18¾ feet of fall between the upper and lower levels. There will be 21 feet of water over the mitre sill, taking the lowest recorded water level. The filling and emptying of the lock will be accomplished by means of four culverts beneath the floor of the lock. In this floor are 152 openings through which the water flows up or down as required. There are three sets of gates at the eastern or lower end. One of these sets is composed of gates to be used only when it is desired to empty the lock for repairs or other purposes. Another set is for use in case of accident. At the upper end of the lock there will be a main gate and a guard gate. Electric power will be used to operate the gates. The completion of the canal and lock is regarded as an important event, and the Canadian government will celebrate the formal opening of the work in a fitting manner.

LAKE FREIGHTS.

The freight market remains fairly active, with an improved outlook for better rates in the near future. The action of the vessel owners in strictly maintaining the 50 cent coal rate to Lake Superior ports on all new charters has developed an element of unanimity of interests that is binding owners closer together than ever before, and it can not fail of bringing about the best results in the future, even if some sacrifice is made at this time by sending boats light rather than accept the go-as-you-please rates on coal hitherto prevailing.

The ore rate of 85 cents, 70 cents and 50 cents from Ashland, Marquette and Escanaba, still rules and nothing less has been quoted through the week.

Grain freights have been quiet all week, 1⅜ cents on corn and 1½ cents on wheat, Chicago to Buffalo, are the latest quotations, while the 2½ cent rate is the nominal figure at Duluth, with little grain being received on account of the railroads not yet being ready to bring it on owing to the damage caused by the recent forest fires. It is expected, however, that large quantities of wheat will arrive in a few days, and as 3 cents has been paid on Fort William wheat, the Duluth rate is likely to improve. Charters were made at 4 cents, Duluth to Ogdensburg; 3 cents, Detroit to Cape Vincent.

The coal rates are steady, Buffalo to Chicago 55 cents, Milwaukee 50 cents, Racine 60 cents, Kenosha 65 cents, Duluth 30 cents, Toledo 25 cents, Ohio ports to Lake Superior 50 cents, Milwaukee 50 cents, Port Huron 30 cents, Cheboygan 40 cents.

The lumber rate from Lake Superior is firm at $1.87½ to $2.00, Lake Michigan and Lake Erie ports.

LOSS OF THE JAMES PICKANDS.

The steamer James Pickands, with iron ore from Ashland, struck a reef during a fog one mile out from Eagle River, at 5 o'clock last Saturday morning. Eagle River reef has had its full share of wrecks, and few boats stranding there have ever been released. The shoals in the vicinity are about two miles from shore and have very deep water all round them. The Pickands was bound down from the head of the lakes with about 1,500 tons of iron ore consigned to Ogleby, Norton & Co., of Cleveland, and met with thick weather while trying to round the point. Capt. Beach was knowr, before taking command of the Pickands, as master of one of the whaleback steamers. The Pickands was built at Cleveland in 1885, and measures 1,319 net tons. She was valued at $85,000.

Capt. Beach reports that she is likely to become a total loss except what salvage can be made out of her. He has discharged all the crew of the wrecked steamer. Of the wreck he says that a rock has forced through

the bottom amidships, the deck is raised about eight feet and the hull is so badly hogged as to make wrecking operations very difficult.

Capt. John W. Moore owned five-sixteenths of the lost boat, Robert R. Rhodes six-sixteenths, Col. James Pickands two-sixteenths and Capt. A. L. Manning one-sixteenth. The remainder was among small owners, and Capt. Moore had only $10,000 insurance on his interest, but the rest were well covered.

The owners of the Pickands were notified that the powerful tug C. E. Benham had left for the wreck.

OBITUARY.

CAPT. THOMAS H. HACKETT.

Capt. Thomas H. Hackett, one of the best known and most skillful masters on the lakes, died of heart disease aboard his steamer, the Volunteer, lying at Detroit, on Friday last. The previous evening he complained to his son, Norman, of what he thought was neuralgia, and medical aid was summoned. The captain passed a sleepless night and gradually grew worse, complaining of terrible pains at the back of his neck, which spread slowly downward until they reached the heart, when he died. Mrs. Hackett was present at the death-bed of her husband. The captain was a large man physically, but had suffered poor health in the last three years, his maladies being catarrh and heart weakness.

The captain was born in Amherstburg, 54 years ago and was a younger brother of the late Capt. R. J Hackett, who was at one time a wealthy vessel owner. He had been a sailor from the age of 21, his earlier experience being on sailing vessels. Twenty-six years ago he superintended the building of the tug Torrent for Alger, Smith & Co., and did his work so well that he was taken into the company's service as master of the tug. Later he commanded the tug Vulcan and the steamers Manistique, Schoolcraft and Volunteer, the latter the largest raft-towing steamer in the world.

It was while in command of the Vulcan that he one day sighted the Detroit passenger steamer Marine City on fire off Algonac. He at once steamed to the scene, and by heroic efforts, in which he was ably assisted by his crew, he saved the lives of some 70 or 80 people. A few who had become panic-stricken jumped overboard before the tug arrived and were drowned. This would have been the fate of the majority on board had it not been for the tug, for not another boat was near at the time and the steamer sank.

Among the passengers saved were E. W. Voigt, the wealthy brewer, and his wife, and he presented Capt. Hackett and Engineer McCabe with gold watches, and the rest of the crew were given silver watches. Upon his arrival back at Detroit, Capt. Hackett was given a gold medal by the citizens.

Cool-headed, calculating, prudent and well-read in marine matters, Capt. Hackett had no superior as a master, and was especially valuable in the raft towing business.

Gen. Alger says: "Capt. Hackett's death is a great loss to us. He commanded our steamers from the year we entered raft-towing, and was always placed at the head of our list of captains and given the best boats to sail. I feel almost as much concerned over the sad happening as though it had been a death in my own family, for he was an unusually conscientious, careful man and made few mistakes. Yes, I have arranged for a general promotion in the line. Capt. William Rolls, of the Gettysburg, will take command of the Volunteer; Capt. Currie, of the Torrent, will sail the Gettysburg, while Ralph Hackett, a son of the captain, and now mate of the Torrent, will command her."

Capt. Hackett was a saving man and left his family in comfortable circumstances. He was a member of the A. O. U. W. and the Shipmasters' Benevolent Association. The funeral, which was private, took place on Monday.

STAGE OF WATER AT ST. MARY'S FALLS CANAL.

DEPARTMENT OF AGRICULTURE, WEATHER BUREAU.

Depth of water at the St. Mary's Falls Canal for the week ending Sept. 27, 1894:

Sept. 20	8 a. m.,	14	feet	8	inches.	8 p. m.,	14	feet	9	inches.
" 21	"	14	"	9	"	"	14	"	10	"
" 22	"	.....				"	14	"	9	"
" 23	"	.....				"	14	"	8	"
" 24	"	15	"	2	"	"	15	"	1	"
" 25	"	14	"	10	"	"	14	"	10	"
" 26	"	14	"	9	"	"	15	"	0	"
" 27	"	15	"	0	"	"				

EXPEDITIOUS BOTTOM REPAIRING.

The steel steamer Yuma left Cleveland on Wednesday after being eight days in the Ship Owners' dry dock during which time one of the heaviest bottom damage cases that has ever entered the port was repaired by the Cleveland Ship Building Co.

The Yuma is owned by the Wilson Transit Co. and Capt. Thomas Wilson, in speaking of the excellent work done on that vessel, says: "There is no other port on the chain of lakes where such extensive repairs could have been made in so short a time with the quality of workmanship and at so moderate, if not low a cost. I am heartily pleased with the job, its price and the brief time taken to do it. The steamer was in dry dock over Sunday but no work was done on that day, consequently the repairs were made in a day less than her dry dock bill shows."

The repairers of the vessel were also her builders and while the plant of the Cleveland Ship Building Co. is second to none in point of facilities for building and repairing hulls or machinery, the work done on the Yuma is certainly a port record. Mr. Thomas Bristow is the superintendent of construction at the yards of the Cleveland Ship Building Co.

COLLISION WITH LOSS OF LIFE.

The steamer Ohio collided with the schooner Ironton about ten miles north of Presque Isle, early on Wednesday morning. The Ohio foundered inside of half an hour. The crew of sixteen took to the boats and were picked up by the schooner Moonlight, consort of the steamer Kershaw. The Ironton sank an hour later. Two of the schooner's crew were picked up by the steamer Charles Hebard. The Ironton was also a consort of the Kershaw, but parted the tow line before the collision. The first mate of the Ohio was picked up two hours later by the Kershaw. The crew of the Ohio highly appreciate the kindness and accommodation shown them by Captain Andrews, of the Moonlight, who did everything possible for them.

The Ohio was cut to the water's edge abreast of the boilers, and was owned by C. W. Elphicke, of Chicago. The Ironton was owned by Capt. W. S. Mack and others, of Cleveland.

At the time of the collision the Ohio was heading south. The Ironton was headed northwest under foresail, mainsail, and jib.

The Ohio was bound from Duluth to Ogdensburg, with aoout 900 tons of flour and general merchandise, while the Ironton was bound up with a cargo of soft coal for Lake Superior. The steamer was valued at $40,000, and was insured for about $30,000. The Ironton was valued at $18,000 and insured for $16,500.

NOTICE TO MARNIERS.

Notice is hereby given that the fog signals at Beaver Island Light Station, Michigan, reported as disabled, have been repaired and are again in operation.

By order of the light house board.

CANAL PROJECTS.

Among the canal schemes talked of at the recent Toronto Convention was the one known as the Ottawa ship canal to be cut between Georgian Bay and Montreal. This route has been under consideration at various times since 1858. The route is from Lake Huron up the French River to Lake Nipissing, thence across the watershed of the St. Lawrence and Ottawa Rivers into Trout Lake, at the head of the River Matawan, a tributary of the Ottawa, thence down the Matawan to the Ottawa and along its course to its mouth, thence by way to the Lachine canal to Montreal. The total distance from Georgian Bay to Montreal is 430 miles. A canal on this route 22 feet deep, 150 feet wide in short sections, 200 feet in long sections with 24 feet of water, the rivers and slackwater reaches, would cost $83,000,000, allowing for the enlargement of the Lachine canal to the above dimensions. Engineers have declared that the route is not feasible, because the rivers are too tortuous and the cost of removing natural obstructions too great.

The Georgian Bay and Toronto Ship Canal or its alternative, the Hurontario Ship Railway, is next to be considered. The canal route is by Lake Simcoe, and is 100 miles in length. It would run from Collingwood to Toronto, which, as the crow flies, is 70 miles. The estimated cost is $22,000,000, but there are almost insuperable difficulties in the way of excavating at the summit, where, for 10 miles, it would require a continuous cutting of an average of 90 feet. Fifty locks would be required. The use of a ship railway instead of a canal was pronounced by the late James B. Eads to be feasible, but built on a scale to transfer vessels of 2,000 tons displacement and 14 feet draft, it would cost $12,000,000.

The Collingwood & Air Line Railway is another scheme. The proposition of the promoters of this route is to locate the railway as nearly as possible along the line of the projected ship railway, this would reduce the distance from Mackinaw to New York City, by way of the Oswego and Erie canals and the Hudson River, to 779 miles, and from Mackinaw, by way of Rochester, to New York, to 760 miles, while the distance by way of the lakes and Buffalo is 1,013 miles. The engineer of this project claims that 100,000 bushels of grain could be loaded on a vessel at Collingwood and transhipped to Toronto in five hours, at a cost not to exceed 1 cent per bushel, including all charges. The estimated cost of this railway, fully equipped and including terminal facilities, is $2,330,000. The principal projector of this route states that he has assurances from ship builders that they can build vessels which will cross the lakes from Toronto and pass through the Oswego and Erie canals.

In the lake route through the Welland canal to Lake Ontario, the estimated cost for deepening the canal to admit vessels of 20 feet draft is $25,000,000. This includes the expense of greatly enlarging the locks.

The idea of a lake route by way of a Niagara Falls ship canal was first taken cognizance of by congress as long ago as 1867. The estimated cost of such a canal—25 miles long—with a depth of 20½ feet and with 18 locks, is $35,000,000.

The lake route by way of a ship railway around Niagara Falls on the American side is talked of. The ength of the road would be 18½ miles, with a maximum grade of 50 feet per mile, and a continuous grade of 4¾ feet, a railway for vessels of 5,000 tons displacement and 20 feet draft, would cost about $10,700,000.

For a Michigan ship canal from Benton Harbor, the distance is 160 miles. The canal would cross 19 railroads, require 65 locks, and cost $138,405,000. A ship railway on this same route would rise to a summit of 475 feet above the lake.

The relative sailing distances from Chicago to Montreal by way of these several routes are:

Via Hurontario ship railway and the St. Lawrence, 1,001 miles. Via the Ottawa River canal, 978,76 miles. Via the lakes, Welland or Niagara canals, 1,263 miles. Via the Michigan-Peninsula and Welland canal, 842.25 miles. Via the Michigan-Peninsula and Niagara railway, 841 miles.

The time it would take to make these routes is given as follows, figuring on 15 miles an hour on the lakes, 10 miles on the rivers, 10 miles on the railways, 7 miles on the canals, besides the necessary delays on railways and in locks:

Hurontario route, 93.14 hours. Ottawa River, 106.17 hours. Around the lakes, 126.58 hours. Michigan-Peninsular, Welland canal, 107.04 hours. Michigan-Peninsula Falls canal, 98.39 hours. Michigan-Peninsula, Falls railway, 90.39 hours.

The number of days in year that the routes might be expected to be open are:

Hurontario, 225; Ottawa River, 205; around the lakes, 225; Michigan Peninsula canal, 229; Michigan Peninsula railway, 234; Michigan Peninsula, Falls route, 229.

The cost of shipping a ton of freight from Chicago to Liverpool by way of the different routes, and the distance, based on last year's rates, are:

Hurontario, $3.48; 4,226 miles. Ottawa River, $4.59; 4,203.76 miles. Lake route, Welland, $3.97; 4,488 miles. Michigan Peninsula canal, Welland, $3.66; 4,067.25 miles. Michigan Peninsula canal, Welland, $3.53; 4,066 miles. Michigan Peninsula, Falls canal, $3.70; 4,066 miles. All rail to Montreal, $6.25; 4,062 miles. All rail to New York, $6.74; 4,353 miles.

VESSELMEN who have loaded lumber at Duluth this season are loud in their praise of the expeditious manner in which the longshoremen of that port handle cargoes. The men are well officered and that may explain why the union has no trouble with employers. Freights control wages and that system seems to work to the satisfaction of the vessel owners and the longshoremen.

EXPERIENCE WITH SERVE RIBBED TUBES IN COMBINATION WITH ELLIS & EAVES INDUCED OR SUCTION DRAFT.

At the thirty-sixth session of the British institution of naval architects, held in July, an interesting paper was read by Mr. F. Gross, an eminent engineer, on the subject of "Recent experience with cylindrical boilers and the Ellis and Eaves suction draft." He said that the boilers which have been working longest with this combination were at the Atlas works, Sheffield. Two were now three years old, two two years and six others newer. These ten single-ended marine boilers, placed together in one shop, furnished part of the steam required by the works, and were consequently at work day and night, except on Sundays and holidays. Their ordinary work was to maintain a regular combustion due to 3 in. vacuum at the fan inlets, corresponding to a combustion of 35 to 37 lbs. per square foot of grate, which is uniformly 5 ft. 8 in. long in all the boilers. For short periods at certain intervals during the day, the quantity of steam required was appreciably greater than the regular quantity, when by increasing the number of fan revolutions, the rate of combustion was immediately raised to 40, 45, 50, or even 60 lbs. per square foot of grate, and as promptly reduced when the demand for the extra steam had passed away. The ten boilers, 10 ft. 6 in. by 10 ft. 6 in. of the Scotch marine type, displaced three to four times as many Lancashire boilers of about 28 ft. by 6 ft. 6 in., while the evaporation per pound of South Yorkshire coal was 9 lbs. actual from cold feed (or 10½ lbs. from and at 212° when burning at 30 lbs. per square foot of grate, or 8½ lbs. actual from cold feed (or 10 lbs. from and at 212°) when burning at 45 lbs. per square foot of grate, as against 6½ lbs. actual from cold feed in the Lancashire boilers burning at 19 lbs. per square foot of grate, with a chimney 130 feet high. Very recent careful examination of the boilers showed that the Purves flues, tube plates and "Serve" tube ends in the oldest were as good as new, and it was worthy of special note that the feed water came cold from the river, unfiltered and that the draft was not shut off when the doors were opened for firing, slicing or raking. The dampers were used only when the fires were being cleaned, every six hours.

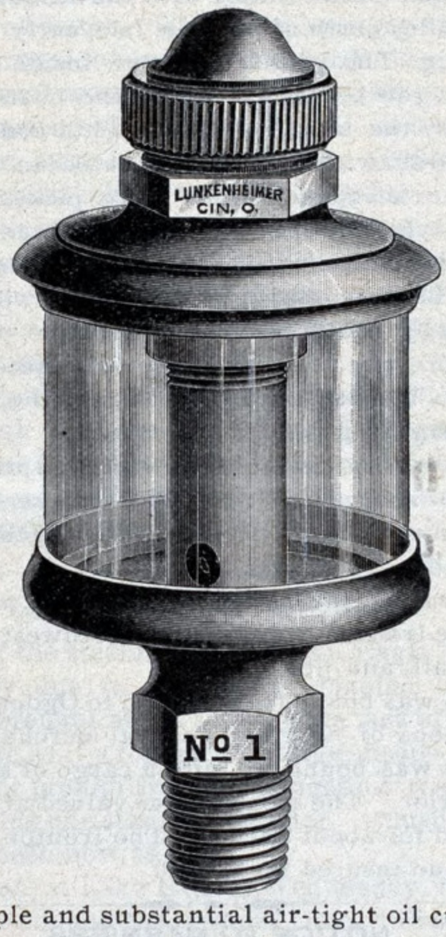
The American line steamship Berlin was the first steamer fitted with the draft, as conveniently as the position of the eight single-ended boilers facing the center longitudinal line of the ship permitted. The air-heating tubes had in this case to be placed across the front instead of lengthwise of the boilers, offering consequently more obstruction, with less effective heating surface than when placed in the usual way. She had been working hard since March 1, 1893, with satisfactory results, and had burnt at an average rate of 26 lbs. per square foot of grate 5 ft. 3 in. long. The same owners had adopted this draft for their two new steamers, the Southwark and Kensington, and while these steamers were giving experience for the Atlantic service, two other large steamers, the Perthshire and Buteshire, were doing the same for the long voyage to and from Australia in the dead meat trade. These four steamers are also fitted with Purves ribbed furnace flues. Each of these ships had completed one round trip with this equipment, and although the Perthshire had been continually under steam for 75 days, yet the furnaces, tube plates, tube ends and fans were found in perfect order on arrival, and the other ship had shown also such excellent results that the owners were fitting the draft arrangement to a third sister ship, the Banffshire.

Briefly summarized, therefore, said Mr. Gross, the experience to date may be considered to have established a rate of combustion on a grate 5 ft. 9 in. long of 30 to 60 lbs. in marine boilers on land, and of 26 to 31½ lbs. at sea, in the Atlantic and Australian services, without trouble to furnaces, tube plates, tube ends, fans and fan engines, accompanied by an appreciable economy compared with boilers of the same size with plain tubes working with natural draft, at half the rate of combustion. The main factor in the economy, was, of course, the "Serve" tube in combination with the retarder, because the "Serve" tube has on an average at least 75 per cent. more heat "absorbing" surface than the same diameter of plain tube. The result is that at the highest rates of combustion, and with 3¼ in. diameter tubes (permitting natural draft to be readily used), the gases, when they reach the smoke box, do not exceed 700°. The heat-absorbing surface of the air-heating tubes completes the economy, the gases reaching the fans cooled down to 300° to 400°, having heated the air to from 200° to 300°, according to the rate of combustion and amount of absorbing surface. Against closed stoke-hold forced draft, burning at the same rate of combustion with plain tubes, the weight of the boilers with this system will be greater, but there is a considerable net saving in weight for other than very short voyages throughout through the economy in fuel, which is naturally greatest against closed stokehold cold air draft. At a combustion of 30 lbs. per square foot of grate this economy will be at least 15 per cent.

Further particulars of the advantages of the "Ellis and Eaves" suction draft and "Serve" tube boilers, as well as of the ships at work with this combination draft, may be obtained at any time from the general agent, Mr. C. W. Whitney, 64 Broadway, New York, and anyone desiring economy in the manufacture of steam will do well to investigate the matter.

THE "MIAMI" PLAIN GLASS OIL CUP.

The Lunkenheimer Co., Cincinnati, O., always alert to the modern requirements of machinery in the specialties which they handle, have now placed upon the market the "Miami" plain glass oil cup with screw plug.



This simple and substantial air-tight oil cup is found suitable for many bearings where the "pioneer" and rod cups are not well adapted. It will not leak when placed on movable bearings, has a simple feed regulating arrangement and an improved screw filler, enabling convenient and quick refilling.

The filling cup being made of very thin and light material is easily screwed tight without the use of a wrench, and will not jar off. When feed is once set, the cup operates automatically and regularly and stops feeding when the machinery is not in motion.

IMMIGRATION.

It is, indeed, difficult to see how any measure of restriction can be devised that would have the effect of excluding from our shores a large proportion of the immigration flowing in, and at the same time have the least chance of being adopted by Congress. A total suspension of immigration for a number of years, such as has been proposed, would be at once rejected by an overwhelming majority of the Senators and Representatives from the West and South as incompatible with the interests of their States. And as soon as an attempt is made to exclude large categories of immigrants, upon the basis of language or of possession of money, or whatever else, it will at once be found that such a measure would serve to exclude the desirable together with the undesirable; and for this reason the attempt will fail. It will inevitably turn out that no restrictive legislation can pass Congress that does not practically confine exclusion to individual cases, such as contract laborers, criminals, idiots, invalids, paupers, anarchists, and the like. Legislation of this kind may apparently be made much severer than it is at present, but the number of immigrants it will exclude will always remain very small in proportion to the whole volume of immigration. The effect may be ever so salutary as far as it goes, but it will be very limited in extent. In our circumstances, political and economic, it cannot but be so. If we are wise, we shall, instead of wasting our time with vain schemes and hopeless attempts, calmy look things in the face as they are, and make up our minds to the fact that we have to do the best we can with our immigration substantially as it comes, giving it the best possible opportunities for making itself useful, and bringing to bear upon it the best possible educational influences to keep it from doing harm. No well-informed man ignores the immense service immigration has rendered to this country in the past, and no unprejudiced man will fail to recognize that it still can do very valuable service in the future.—*Harper's Weekly.*

"MIKE," THE IRISH SAILOR.

"We had among our crew on this voyage an Irishman, a genuine son of the soil. He kept us in almost constant merriment by his wit and his marvelous 'bulls.' He was always in hot water. It was the exception for him to do anything right. On one or two occasions it was by the merest good luck that he was not killed outright through his stupid blunders. One calm day we were shifting our foretopsail. Mike was sent aloft to bear the sail off as we were hoisting it up. It had jammed at the lower side of the topsail-yard. Anybody but Mike would have clung to the topsail tie with one hand when bearing the sail off. He had no such thoughtful care of himself. He caught hold of the gantline with both hands, and, throwing the whole weight of his body outwards, got the sail in a position to clear the yard, and shouted to us to hoist away. Whether there was a flaw in the rope I do not know, but with the first pull it parted, and we were horrified to see the sail and the man coming down by the run. As this was a sheer fall of about sixty feet, we made up our minds that the poor fellow would be killed. He was not. As fortune would have it, the sail fell under him, and, to our amazement, he at once scrambled to his feet. Scratching his head, he cried, 'Howly Moses! Is there any wan hurt?' It was quite clear that he was not, for he continued his duties as though a fall of sixty feet was a trifling occurrence to him."—"*Reminiscenses of a Sailor,*" *by Capt. William R. Lord.*

A NEW PUBLICATION.

Machinery, the new monthly illustrated publication, "a practical journal for machinists and engineers, and for all who are interested in machinery," is found this week on our exchange table. The front cover contains an excellent half-tone cut of the late Wm. Cramp. The table of contents includes a well written article on "The Cramp Ship Yards," by Fred H. Colvin, with engravings of the works, etc. Among the list of contributors who will write for the paper during 1894-5 are Leceister Allen, Daniel Ashworth, Frank H. Ball, John H. Barr, Simpson Bolland, F. Ruel Baldwin, Eckley B. Coxe, S. W. Goodyear, James F. Hobart, H. H. Supplee, Coleman Sellers, L. S. Starret, Jay M. Whitham, Thomas D. West, and many more well known mechanical and engineering experts. The editor of *Machinery* is F. H. Colvin, with W. H. Wakeman and W. L. Cheney as associates. Subscription is 50 cents a year. *Machinery* is published by the Industrial Press, 411 Pearl street, New York.

THE "AUTOMATIC" STEAM STEERER.

Messrs. Crawley & Johnston Cincinnati, O., are in receipt of a number of very flattering reports of their automatic steam steering gear fitted on lake tonnage. Capt. Bailey, of the steamer John B. Lyon, Wm. Jamieson, master of the Geo. H. Dyer, and R. H. Fitzgerald & Co., each furnish testimonial letters of the efficiency and durability of the steam steerers, as well as a number of masters and owners on the coast.

THE shipment of flour from the Pacific coast to China and Japan has reached unprecedented proportions since the war commenced. Freight has had to be refused by the steamship lines for want of room. The result of the rush has been an advance of 50 cents a ton in the freight rate on flour by both the American and Canadian Pacific lines.

WILLIAM L. BROWN, President.
WALTER F. COBB, Vice President and Treasurer.
W. I. BABCOCK, Manager.
O. R. SINCLAIR, Secretary and Asst. Treas.

Chicago Ship Building Company,

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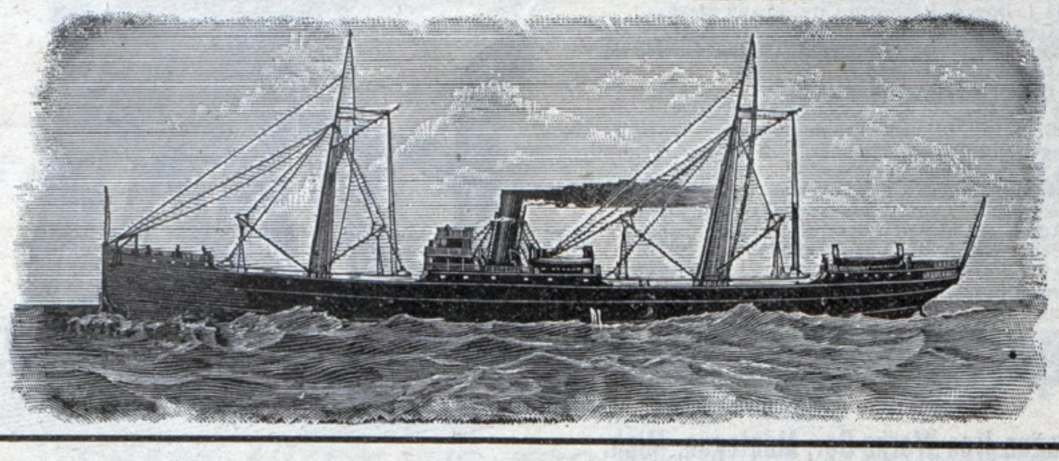

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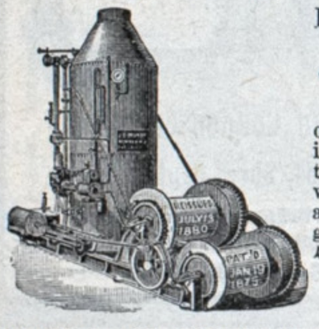

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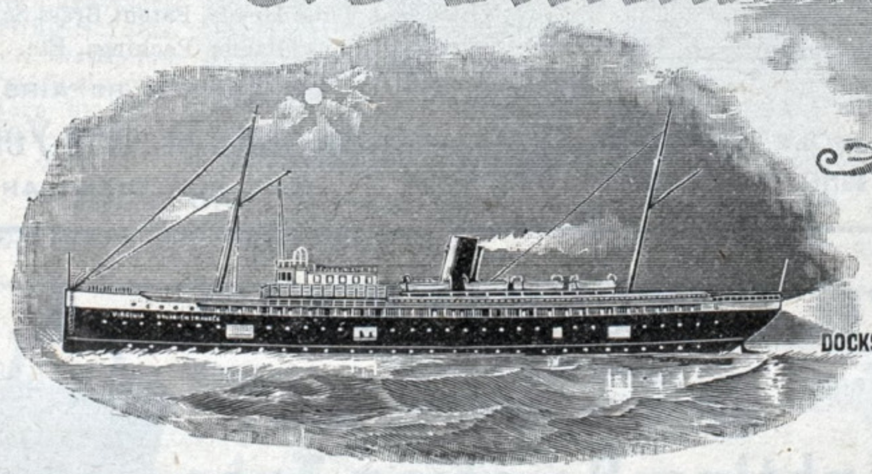

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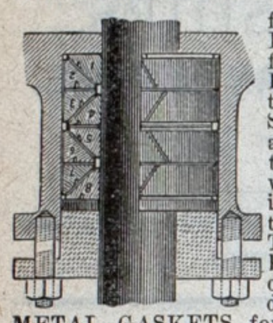

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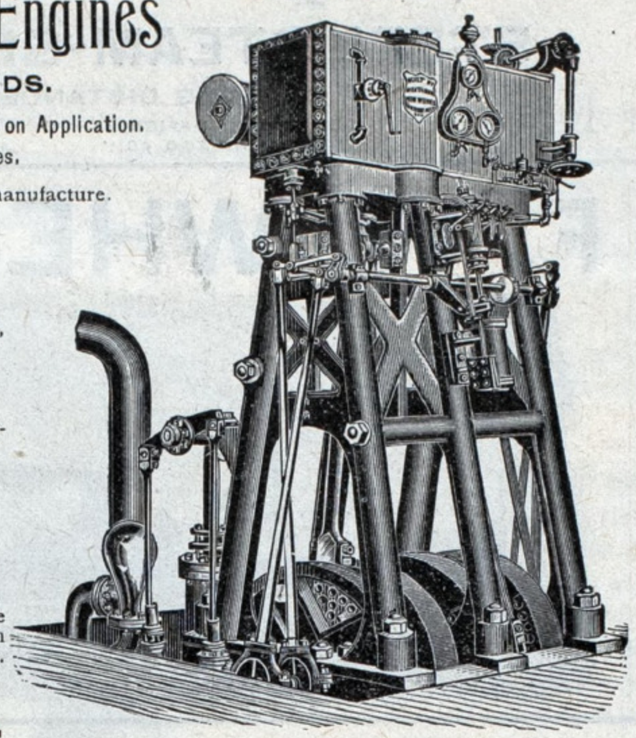

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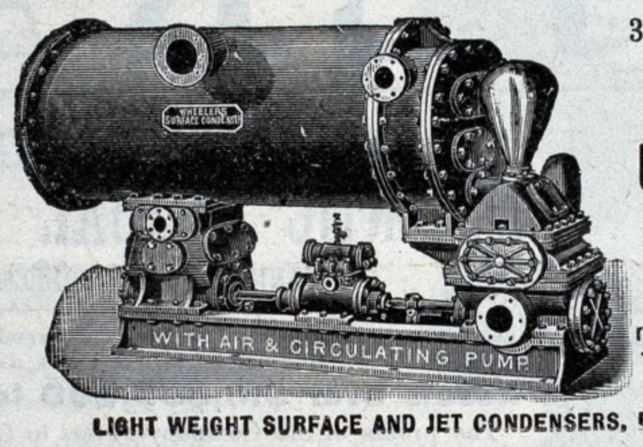

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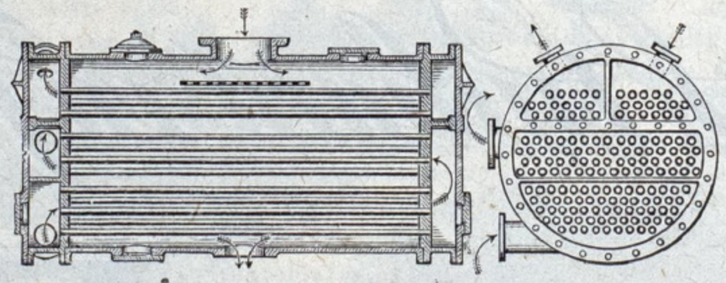

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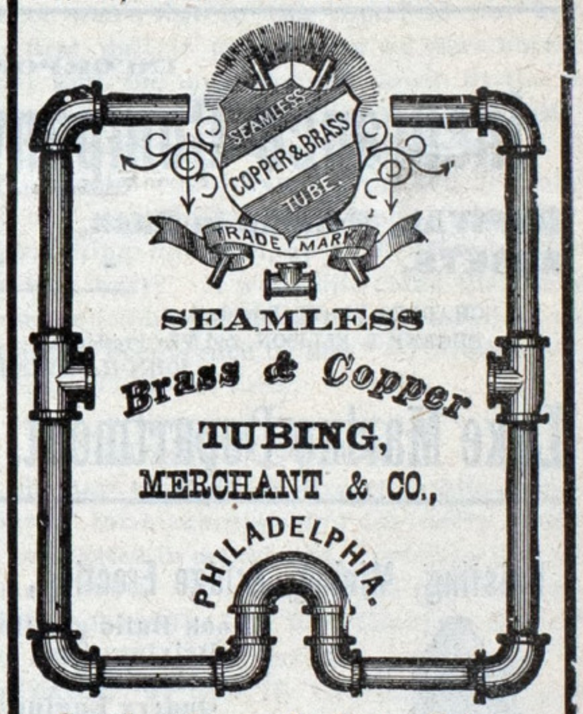

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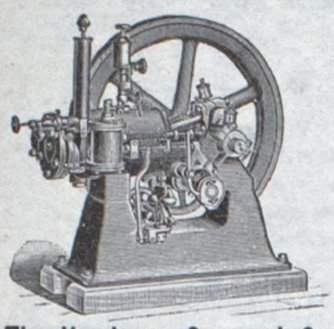

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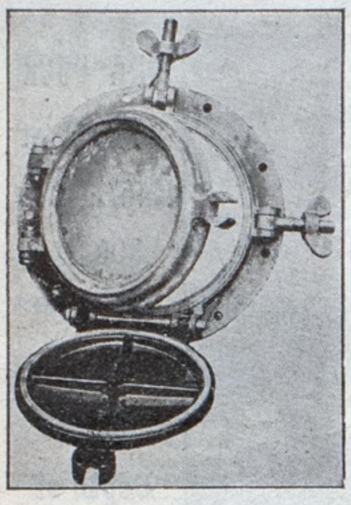

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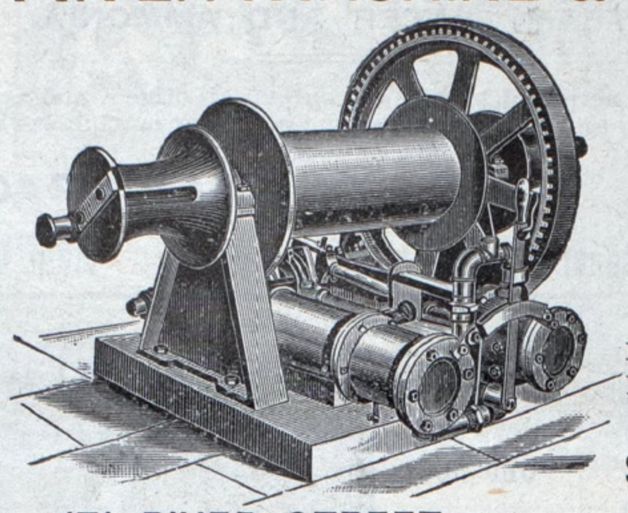

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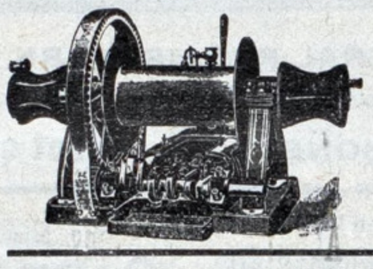

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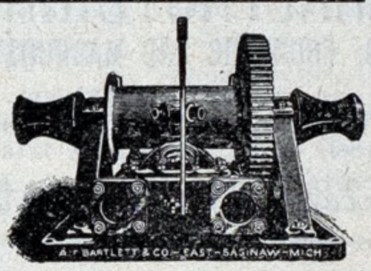

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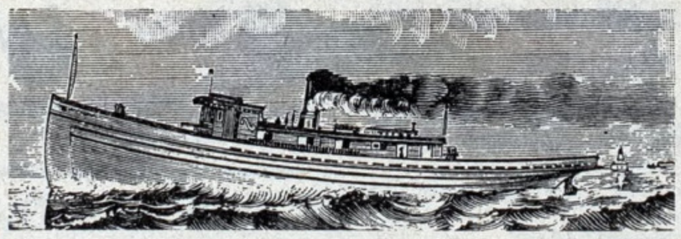

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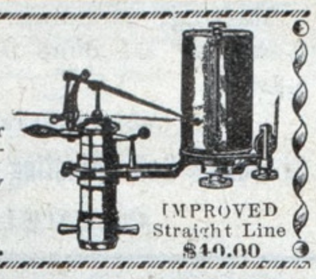

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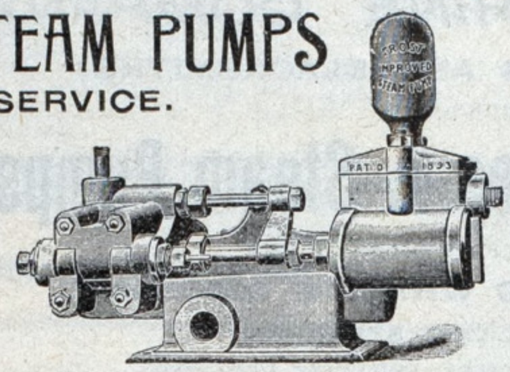

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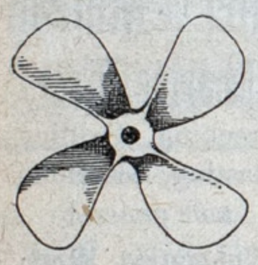

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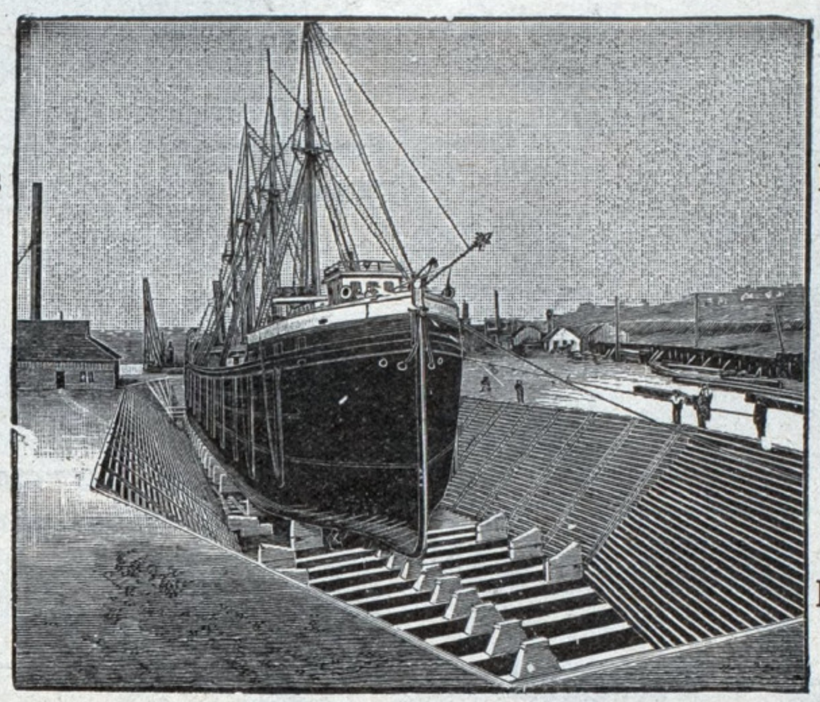
Length of Keel Blocks		Length of Keel Blocks
340 ft.		300 ft.
Width of Gate		Width of Gate
50 ft.		52 ft.
Depth of Water on Keel Blocks		Depth of Water on Keel Blocks
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